Personality Disorder and Intellectual Disability: The Impacts of Horticultural Therapy Within a Medium-Secure Unit

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This study was designed to explore the efficacy of a horticultural therapy intervention for the enhancement of subjective health and wellbeing in male service users[1] with a dual diagnosis of personality disorder and intellectual disability in a medium secure unit in the north of England, UK. Service users (n=7) were involved in three focus groups; one just prior to a new garden facility opening, and then again at the nine and twelve month points, which explored the personal impacts upon service users' health and wellbeing. The garden was itself an upshot of participant involvement; service users were involved in all aspects of the garden design and maintenance, and also assisted with dissemination of the research goals and findings. Service users reported numerous personal health benefits as a result of their engagement with horticultural activities, allied to personal development enhancements in respect of gardening knowledge, employability skills, personal achievements and positive changes in behavior towards self and others. Particularly, underlying these outputs, participants identified reduced stress, and a general "feel good" factor as key to their improved life-satisfaction. The mechanisms providing for these impacts included: interaction with a natural environment; enhanced intrinsic motivation derived from participation in a variety of tasks; and opportunities to develop specific horticultural skills. Immersion in horticultural activity may thus be an effective treatment modality in promoting positive health benefits to service users.

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In recent decades a valuable body of literature has grown regarding the health benefits that can result from regular participation in green exercise. This phenomenon effectively involves exercise undertaken in active conjunction with natural environments, particularly gardening and conservation work (Christie, Miller, & Dewhurst, 2015; Coon et al., 2011; Pretty et al., 2007). The value of this form of exercise for addressing everyday somatic matters is, to some extent, already a germane concern within mainstream research; in this respect, one need look no further than illuminating work on cardiac rehabilitation patients (Wichrowski, Whiteson, Haas, Mola, & Rey, 2005), people with physical disabilities (Wilson & Christensen, 2011) and the experiences of older adults (Jackson, 2005). Conversely, there is rather less work available to date on the psycho-social impacts of horticultural therapy in general, and even less regarding its efficacy in what we might term "institutional settings." The majority of influential studies in the psychological field emergent of the horticultural therapy paradigm have been largely laboratory-based (Pretty, Peacock, Sellens, & Griffin, 2005; Pretty, Hine, & Peacock, 2006). As Christie et al. (2015) note, however, it is important to reflect upon the ecological validity of taking thoughts and feelings out of the natural environment and into an artificial setting. Indeed, and as Erving Goffman (1961) emphasised well over a half century ago, in order to understand institutional behavior, one needs to first (a) qualitatively describe activity within the institution itself, and (b) make sense of what that means to the institutionalized. With these points in mind, an increasing number of documented hospitals, care homes and prisons across Europe have, in recent

[1] Within the UK's National Health Service (NHS), the term "service user" is generally used to index any individual who is currently using healthcare services. Elsewhere, the same individual might be termed a "client" or a "patient."

years, used gardens for structured therapeutic purposes around a range of conditions (Sempik, Aldridge, & Becker, 2009). In short, it is taken as read by active practitioners in various forms of institutional facility that green activities have therapeutic value for a variety of psychological and somatic conditions. Nevertheless, there remains a lack of contemporary research investigating the influence of such horticultural therapy (HT) in specifically custodial settings. This paper, thus, reports the impacts of a HT intervention on the subjective health and wellbeing of seven male service users, presenting with a dual diagnosis of intellectual disability (ID) and personality disorder (PD), in a UK National Health Service (NHS) medium-secure unit[2].

Introduction

The treatment of service users with acute intellectual disabilities and/or personality disorders, in secure settings and otherwise, can be a notoriously challenging process. Because such individuals often have highly unsettled biographies involving convictions, risky behaviors, disrupted childhoods and regular transitions between care establishments, their diagnosed disorders can be accompanied by feelings of abandonment and hopelessness (Howells & Tennant, 2010) that further complicate attempts to engage them in constructive therapeutic interaction. Withers et al. (2012) similarly highlight the powerful exclusion factors that typically pervade the lived experiences of people with intellectual disabilities, manifesting in segregated activities throughout their life course, including attending special schools, working in sheltered environments and becoming trapped in poorly paid manual employment. Consequently, these individuals often develop poor social skills, low self-esteem and an inability to form healthy relationships (Howells & Tennant, 2010). From a therapeutic point of view, this often results in the reinforcement of counter-productive behaviors commonly associated with PD: splitting/colluding within a group, rejecting members of clinical staff and actively denigrating those who might be in a position to help (Sheldon & Tennant, 2011). Further complications exist in respect of individuals with ID and PD also frequently presenting with poor physical health (e.g. obesity, cardiac problems, poor diet and inactivity), regularly compounded by the side-effects of antipsychotic medication, such as weight gain, low motivation and lethargy (Page, 2008).

Intellectual Disability, Personality Disorder and Occupational Therapy

"Occupational form" is a term used particularly within Occupational Therapy (henceforth OT) to describe a culturally-recognizable structure, involving rules, procedures and equipment that elicits and guides associated (and often creative) activities (Creek, 2010). Withers et al. (2012) address the importance of bespoke forms of occupation as part of an overall program that targets the "deficits" typically manifesting in the lives of people with PD and ID. In this respect, effective occupational interventions for individuals who have experienced a widespread lack of choice, freedom and

[2] The facility itself houses, at any given time, a maximum of sixteen adult male service users with ID and PD, some of whom also have a co-morbid diagnosis of mental health issues. Based in the North of England, it is one of an estimated 65 English public and independent sector facilities that provide a specialist forensic environment offering assessment and therapy of this order.

reward are typically based upon the expectation of enjoyment and success, while also promoting a sense of personal autonomy and everyday normality (see also Stewart & Craik, 2007). Individually-relevant, self-selected forms of occupation, thus, have been shown to motivate service users to engage with treatment programs and to assist with the acquisition of greater emotional control, thereby induce corollary improvements in social relationships (Withers et al., 2012); the authors also note, however, that the overall amount of evidence addressing the efficacy of any such interventions for individuals with a diagnosis of PD remains small, and that pertaining to a dual diagnosis of ID and PD even more so.

Horticultural Therapy and Psychological Rehabilitation

HT as a practice is typically conceptualized as an active and client-centred process, facilitated by trained therapists to achieve specific and documented treatment goals (Haller & Kramer, 2006). It embeds the promotion of health and wellbeing, including physical and psycho-social functioning, as a core intended outcome in the context of an established treatment plan, such that the process itself acts as the therapeutic activity, rather than the end product (Burls, 2008; Haller & Kramer, 2006).

As noted above, the body of work investigating the value of formal HT and allied green activity has expanded considerably in recent years. While there is no research to date relating specifically to the treatment of ID and PD in secure facilities, an increasingly compelling corpus of evidence has emerged regarding the psychological impacts of engaging individuals in HT-related activities across a range of rehabilitative contexts (Coon et al., 2011). For example, Söderback, Söderström and Schälander (2004, p.245) describe how group participation in a Swedish HT garden mediated "…emotional, cognitive and/or sensory motor functional improvement, increased social participation, health, well-being and life satisfaction" in N=46 pediatric patients in rehabilitation following brain damage. Perrins et al. (2000), meanwhile, in a study of the impacts of a group-based community horticultural activity upon ten individuals with chronic mental illnesses, found an immediate and affirmative effect on general life satisfaction, personal wellbeing, and self-concept. Equally compellingly, Gonzalez *et al.* (2009), report findings arising from recurrent administrations of the Beck Depression Inventory during, and three months after, a twelve week HT intervention for N=18 individuals with clinical depression. Their findings demonstrate improved perceived attentional capacity and reduced depression severity across all participants, particularly where the embedded activities particularly captured their attention.

Taking together extant work in OT and HT, thus, a horticultural intervention was designed for service users presenting with ID and PD at a medium-secure unit, and a research program organized to explore impacts upon participants' wellbeing.

Methodology

The research reported in this paper was designed to explore the impact of the described horticultural intervention on service users' subjective senses of health and wellbeing. Consequently, the interpretative paradigm was embraced in order to foreground participants' own understandings of self, others and activity within the practical business at hand (Silverman, 2010). The research framework applied was broadly thematic, drawing extensively upon the model outlined by Braun and Clarke (2006) in describing the ways in which participants made sense of how various embedded working activities did or did not "work" for them.

Intervention

The twelve-month intervention from which findings reported in this paper arise was planned to enable a "gardening group" of service users at the participating institution to engage in activities with potential benefits in (a) the social domain, such as cooperation toward completion of a specific goal, and (b) the psychological domain, such as enhanced self-esteem, lower arousal levels and more positive mood states (see Fieldhouse, 2003). Service users were tasked with designing and creating a garden on the hospital site, and empowered to set their own "targets" (e.g. to produce their own vegetables, plan and plant shrub borders, develop an appropriate space in which to relax and socialize). The final garden (see Figures 1, 2, 3) arose from a synthesis of designs proposed by service users (see Figure 4 for an example), and included designated areas for growing vegetable produce, a flower bed, a lawn area with picnic tables and a chicken coop.

As the enterprise evolved, participants were involved in a range of activities, including raking, digging, planting, watering, adding mulch and potting up plants. Sections were linked and separated via tarmac paths which were

Figure 1. The medium secure unit garden involved in the study with shed & greenhouse

Figure 2. The chicken coup

Figure 3. Vegetable patch

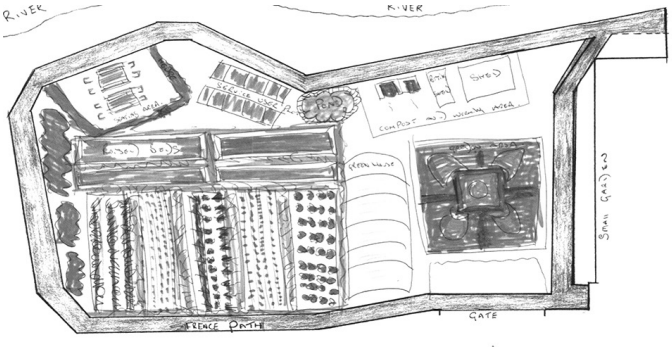

Figure 4. A service user's sketch of the proposed garden layout

themselves a regular source of occupation, requiring regular sweeping and cleaning.

All service users were required to show a "settled" 24-hour period before being allowed access to the garden. Formal risk assessment also included individual "conditions of entitlement" to various gardening tools, ranging from plastic-only, through to standard implements. All activities were carried out in small groups of no more than three at any one time. Staff and research team members joined in with the gardening activities, in order to promote a productive and motivational climate. This also fostered a sense of relational security (Page, 2008), in which the relationships derived from co-operation in the garden promoted a relatively trouble-free working environment. The absence of any serious incidents within the garden confirms that the intervention itself was delivered in a safe and supportive way.

The overall engagement of the service users by the research team ensured that the project was of relevance to all members of the group, and had the potential to promote an emancipatory outcome (for example, highlighting good practice which may be employed at other similar institutional settings). Subsequently, two service users were co-presenters with the research team giving details of the project to a regional NHS conference.

Subjects

Of the total population of male service users (N=16) resident at the medium secure unit at the initiation of the project, N=14 (age 18-58 years) initially agreed to be involved. All were receiving a personalised care

pathway to ultimately facilitate a return to independent living in the wider community, and none had previously been subject to any order of horticultural therapy intervention. Of these, seven completed all twelve months of the study; two transferred or left the ward in month 10; and another two in month 11. The other three transferred shortly after the study began and so were not included in the data sets. The nature of the service - with the potential for transfers in and transfers out of the unit - meant that the cohort did not therefore represent a static population. Only the contributions of the seven who completed the study are considered below.

Each was involved with the garden between one and three times per week, for a maximum duration of two hours on each occasion. In line with ethical requirement (see below), participants were assigned pseudonyms to protect their identity.

Procedure

Focus groups have particular facility as an exploratory tool when investigating issues hitherto lacking in evidence (Denzin & Lincoln, 2013; Silverman, 2010). They enable a range of issues to be raised and discussed, and also for unforeseen "novelties" to arise both as a consequence of individual action and collective interaction (Denzin & Lincoln, 2013). In this particular research context, the focus group approach also mirrored the structure of the participants' own regular "speak up" collective therapy sessions in which they discussed their issues of concern with each other and with staff. As such, by embedding the focus group discussions within these sessions, participants were provided with a familiar environment in which they could voice their opinions. This, to some extent, negated the common methodological complaint that a focus group can sometimes be a restrictive or intimidating setting for individuals, rather than an enabling one (Silverman, 2010). Three focus groups were conducted, involving 6-7 service users on each occasion, and facilitated by the lead and on-site researchers:

1. The first, immediately prior to the garden opening, explored the expectations of service users regarding working in the garden, and how it might affect their daily lives;

2. The second, after nine months, considered their engagement to that point;

3. The last, after twelve months, reviewed their overall experiences and attempted to summarise the personal value of their participation.

Unanticipated issues were pursued in all three focus groups, and iteratively helped shape the content (via specific lines of questioning) and conduct (via effective phrasing of questions) of subsequent sessions. Researchers also made their own observational notes on the dates that they themselves were involved in the garden to assist with triangulation of data. All data were transcribed in full, and anonymised during the transcription process.

Analysis

Analysis of the transcribed data was based upon the six-step approach outlined by Braun and Clarke (2006): data familiarization; generation of initial codes; thematic searches; review of identified themes; defining/redefining and naming these themes; and writing up the report. This is a recursive process, in which researchers are encouraged to revisit the various stages of the process as necessary, in order to ensure optimal levels of trustworthiness.

Following extensive review of the transcribed data by all authors, collaborative grounded coding was used to mark preliminary themes, using Atlas-TI v.6.2 software[3], which were grouped into nine sub-themes. Three core themes were then synthesized by the lead researcher and on-site co-researcher, which were subsequently verified by the other partners in the research as an operation in triangular consensus validation (P. K. Miller, Cronin, & Baker, 2015). Member checking was conducted by presenting a précis of emergent key themes (with supporting quotes, and using pseudonyms) at a subsequent visit to the unit. Service users identified the themes as representative of their experiences. A clear audit trail, thus, exists involving initial outlines of codes and semantic themes, followed by software-analysed records involving further deliberations regarding identifying, defining and confirming codes and themes (Braun & Clarke, 2006).

Ethics

Ethical approval was acquired from the host NHS Trust, and the regional NHS research ethics committee (ref: 12/NW/0260). Research design recognized the usual conventions surrounding client confidentiality and avoidance of any negative impact on participants from

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Table 1
First Focus Group – Preliminary Issues for Discussion

Issue 1	*What are you most looking forward to doing in the garden project?*
Issue 2	*What do you hope the garden will look like in a year's time?*
Issue 3	*Do you think the garden make any difference to your daily life? (Why? How?)*
Issue 4	*Will taking part in the garden affect your health in any way? (Why? How?)*
Issue 5	*Do you think you will learn anything by being part of the garden project? (What?)*
Issue 6	*Do you think working in the garden will change the way you feel about yourself? (In what way?)*
Issue 7	*Do you think the garden will help improve your relationships with others? (Why?)*
Issue 8	*Has the delay to the garden project affected your view of taking part in the garden?*

Table 2
Second Focus Group – Preliminary Issues for Discussion

Issue 1	*What have you been doing out in the garden today? Why did you do that?*
Issue 2	*What have you found that is good about being involved in the garden, or not good? (Why?)*
Issue 3	*What activities do you like doing in the garden? Why?*
Issue 4	*How much has the garden changed since you started working in it? (Explain what this has meant to you)*
Issue 5	*Is going into the garden making any difference to your daily life? (In what way? Why?)*
Issue 6	*Is taking part in the garden affecting your health in any way? (Explain)*
Issue 7	*Have you been learning anything from the gardening? If so, what?*
Issue 8	*Does working in the garden make you feel differently about others in the unit?*

Table 3
Third Focus Group – Preliminary Issues for Discussion

Issue 1	*Do you think the garden has changed since you first starting working in it? (How?)*
Issue 2	*Has life for you changed since being involved with the garden? (How & why?)*
Issue 3	*Thinking now about the time you have spent in the garden - has this affected your fitness in any way? (Explain)*
Issue 4	*Have you learned anything by being part of the garden project? (If so, what?)*
Issue 5	*In what ways have you contributed to making the garden what it is today? (What has doing this meant to you?)*
Issue 6	*Has working in the garden made you feel differently about yourself? (In what way? Why?)*
Issue 7	*Has the garden made you feel differently about others? (If so, in what way? Why?)*
Issue 8	*How would you like to see the garden develop from this point in time? (in the future) (Explain)*

taking part in the study.

Consent forms were discussed with individual service users and a period of seven days elapsed between the presentation of information (using easy-read formats) about the research project and their consent to becoming involved. Any service users who did not want to be engaged with the research were still able to engage with the garden facility. All participants were professionally determined to have capacity to consent.

Findings

The focus group discussions were designed to identify not only service users' views as to the personal benefits derived from their participation in the HT program, but also the mechanisms through which these came about. As noted above, analysis revealed nine sub-themes, as illustrated in Figure 5.

Figure 5. Sub-themes

The overlapping character of these sub-themes within participants' own accounts rendered salient three core themes, shown in Figure 6.

Figure 6. Emergent core themes

These themes are discussed, with reference to supporting evidence and pertinent literature, in three eponymous sections below.

Core Theme 1: Escape and rejuvenation

In all three focus groups, core gardening activities were taken to have directly facilitated reductions in day-to-day stress, and promoted a relaxed, happier and calmer state than they experienced in the indoor environment. In this respect, the findings are conversant with those pertinent to mental health issues arising from non-institutional environments (Fieldhouse, 2003). As Chambers (2009) highlights, however, the clinical environments in which service users in secure facilities undergo treatment programs are necessarily restrictive and highly structured. In this study, thus, and perhaps unsurprisingly, the stress-reducing function of the garden was often linked to it being a place in which to escape or "be away" (Gonzalez et al., 2009) in a number of senses. Physically speaking:

> Neil: *"[The garden] calms you down a lot... because you are in the garden, in the fresh air… I can walk away from things more in the garden. But indoors you can't get away. I feel cramped in the building, but I feel fresh outside, hearing the hens."* (FG2: 20)

> Peter: *"Inside upstairs I feel my chest is blocking in... but I breathe better outside, in the fresh air."* (FG3: 27)

> Tim: *"[Y]ou're in here 24/7, you know, and it's nice just to get out and get some fresh air."* (FG2: 52)

Harry, meanwhile, emphasised that for him the garden provided a means of escaping from a sense of indoor restriction even when he was actually still indoors: *"I've got a much better view from my room [now, and] I can hear owls, bats, chickens, the river..."* (FG3: 20). In short, in a secure setting, a sense of psychological freedom could be engendered by the garden simply being within range of the senses. Furthermore, the garden was also viewed by participants as a catalyst to escaping from difficult patterns of individual behavior, largely through shared release of tension or just doing something "different" together. For example:

> Peter: *"It's nice being able to eat out in the garden, I enjoyed it in the summer, getting out in the fresh air, playing chess in the garden, and table tennis...and I like the chickens coming up to you when I'm in the garden."* (FG3: 9)

> Anthony: *"We're all using proper tools, but there's no incidents!"* (FG3: 33)

This implied sense of the participants' shared ownership of the outdoor space as a liberating force, while the indoors belonged to the "therapists," was sometimes brought into even sharper relief:

> Neil: *"[I]t's a lot different to the upstairs OT; we're not in the same room, and we've got our own space outside…it's totally different in the garden."* (FG3: 25)

There are a number of positions impacting upon contemporary HT discourse regarding how the use of plant-based activities can be productive for improving individual mental health. For example, Csikszentmihalyi (2002) argues that, within a "flow experience," negative thoughts or feelings can be temporarily displaced or "screened out" by some orders of activity, and replaced by positive feelings of contentment, self-worth and intrinsic motivation. This reasoning was sometimes reflected in participant accounts:

> Peter: *"[I can] blank everyone out and just get on with gardening."* (FG3: 13)

However, the bulk of participants' descriptions above would seem particularly congruous with attention restoration theory (ART), which posits that interaction with nature promotes positive affective and physiological change (Kaplan, 1995). Essentially, ART argues that maintaining directed attention – or concentration regarding a specific task - requires significant mental effort and discipline in order to maintain focus, and resist competing influences. For example, this may involve concentrating on writing a business report; or preparing for an exam; or, in the case of the participants in this study, the need to focus on specific aspects of their treatment program. Directed attention is subject to cognitive fatigue, allowing for distractions to increasingly interfere with cognitive functioning. In some cases, this may result in an inability to suppress inappropriate behaviors, such as acting aggressively towards self or others. It is posited, therefore, that engagement with natural environments – and the effortless fascination, or immersion, it provides (such as planting seeds, or simply viewing nature) – can restore those depleted levels of directed attention (Kaplan, 1995). In short, escape *is* rejuvenation and vice-versa. This may mean that service users can regain some degree of focus regarding emotional control, for example, or re-engage effectively with a specific component of their rehabilitation program when a perceived escape, even a temporary one, can be made.

> Neil: *"Digging and stuff, getting the stress out of you, and you come back in and you have released all the stress."* (FG2: 20)

Although the recounted experiences of the participants in this respect were overwhelmingly positive, this is not to propose that they were universally so. Any shared enterprise can lead to interpersonal tensions where methods of planning and execution are not subject to universal consensus and, with respect to the intervention at hand, the desire of the majority of participants to include a chicken coop proved a source of frustration to others:

> Tim: *"[T]he chickens have been a real problem. Like they keep digging up the vegetables, knocking the netting over…it delays things happening."* (FG3: 4)

At the most fundamental level, perhaps, what is certainly clear from the findings reported above is that activities within the garden simply provided participants with the sense of reclaimed "normality" within the confines of institutional life stressed by Goffman (1961):

> Anthony: *"I feel like I'm not locked up, I'm free."* (FG3: 7)

The positive feelings associated with finding sanctuary through accessing a natural environment link to the next core theme, in respect of the motivation service users maintained for participation.

Core theme 2: Motivation, productivity and hope

As previously noted, identifying motivational activities is essential in engaging service users with their treatment programs. In such circumstances, motivation itself has been recurrently shown to be strongly dependent upon the level to which individuals find an activity interesting, and invest in it with meaning and purpose (Creek, 2010; Parkinson, Lowe, & Vecsey, 2011). In this respect, Fieldhouse and Sempik (2014) illustrate how meaningful activities with a green care orientation can not only contribute to reducing occupational risk factors, but also enhance personal and social capital by replicating the characteristics of "normal" everyday work. This concern was sometimes explicitly evident in the participants' accounts:

Tim: *"I feel more relaxed; I've got that space... I feel like I'm back in the community, like digging for the council."* (FG3: 26)

On the other hand, subtler allusions to how the garden had provided opportunities to mobilize tacit occupational skills such as care and attention were also evident:

Neil: *"I mean with the plants it's putting them out at certain times, you just can't put them out at any time (in the cold), you have to look at the back (label) and read it and it's learning about that as well."* (FG2: 65)

Utilizing activities of daily living that are also educationally, socially and vocationally relevant can be a critical step in the rehabilitation process and the facilitation of normalized behavior (Helbig, 2003). In line with the findings of prior research (Fieldhouse & Sempik, 2014; Parkinson et al., 2011), which has highlighted that growing and using food generates an active provider role and occupational identity for people who are otherwise recipients of care, the above concerns were reflected most clearly in the participants' recurrently reported enjoyment of adopting the role of an active producer of useful resources:

Jake: *"I've learnt about planting carrots!"* (FG2: 72)

Tim: *"We've had lots of food out of it, like potatoes, courgettes, other veg… We've done different tasks."* (FG3: 3)

This activity, in turn, had the corollary effect of providing satisfying social moments within the unit's community:

Tim: *"We made a potato salad and [one of the] patients didn't know he was eating the stuff out of the garden until the cook told them and they said 'Oh I didn't know!"* (FG2: 33)

A feature of all three focus groups was how participants were able to find motivation not only in current activities, but also in prospective ones. For example, and respectively, these prospective activities pertained to the overall enterprise as-planned, or further developments upon what had already been achieved:

Tim: *"I'm looking forward to growing our own vegetables ...cabbage, rhubarb, stuff like that and carrots, swede. Anything like that, or any other vegetables… doing all the planting."* (FG1: 6)

William: *"I'd like to grow more vegetables, and have more fencing for the chickens. If we could have more animals, and another hut, we could sell more eggs. It would be good to have more tools, and be trusted with the tools, like the hoes, and the hose pipe."* (FG3: 35)

Anthony: *"It would be good eating meals out there, and playing ball games, draughts, that kind of thing…and grow more vegetables. Be good to grow fruit, and have plums and pears."* (FG3: 38)

The latter, in particular, highlights how the garden was seen as having both social and occupational functions. In these kinds of assertions, we have cause to reflect on the "phenomenon of hope" outlined by Miller (1992). "Hope," in these terms, relates to envisioning a more positive future based upon, for example, greater self-reliance, better health, personal competency and having a purposeful direction in life. In this sense, the individual's personal journey can be linked to the hope associated with growing plants and vegetables from seed, in contrast to seeing custody as a setting essentially devoid of hope. Using horticulture as a vehicle for personal development – and thereby embracing hope in practice – may lead to a highly therapeutic intervention, underpinned by appropriate monitoring and assessment in respect of numerous psycho-social factors, for example by utilising the mental health "Recovery Star" (Onifade, 2011).

Actions as simple as growing produce from seed can, thus, be a valuable tool in developing individual self-worth and promotion of positive social dynamics, as well as the skills and knowledge to make such an outcome happen (Fieldhouse, 2003; Fieldhouse & Sempik, 2014). This links to hope, but also the issue of "embracement" (Burls, 2008) which proposes how the development of a garden from scratch can be mirrored in the personal and social growth of those involved in the process. Reflecting on the overall garden experience, Neil commented: *"[W]hen you get the veg and stuff…you are picking them up and doing something with them like cooking… so you are planting them to get something out of them."* (FG2: 29)

In sum, service users often directly referred to the pride, enjoyment, achievement and satisfaction derived from participation in the various horticultural activities,

and how this motivated them to sustain involvement. In short, participation in these activities had an autotelic property; it was, to an extent, its own reward. For example, Jake claimed that the most apparently simple of gardening activities gave him a sense of both occupation and achievement, which continued to facilitate his involvement throughout the project's duration: *"I enjoyed the garden, cleaning the footpath and watering the plants, and going to let the hens out in the morning."* (FG2: 66). It has been widely observed in contemporary research (Biddle, Petrolini, & Pearson, 2014; Pearson, Braithwaite, & Biddle, 2015) that intrinsic motivation of this order is key to sustaining participation in physical activities of all kinds.

Core theme 3: Occupational reward

Alongside the autotelic experience associated with the horticultural activities, a series of other occupational rewards were described by participants. Some of these were manifestly intended as "occupational performance" (Baum & Law, 1997) outcomes of the intervention itself, while others were unexpected (though nonetheless constructive) latencies.

Cole (2014, p.218) advocates that "…tremendous opportunities exist to utilize service users' skills, for example, in horticultural knowledge for a gardening/ allotment group," and using and enhancing vocational knowledge/skills was indeed a recurring concern for participants in the present study. In the first focus group, Tim, for example, spoke about his previous experience of working on allotments, and discussed how using this knowledge could help with the garden's development:

> *"Muck-spreading in the garden is to help the flowers…it's old poo (manure) which helps things grow"* (FG1: 66)

In subsequent focus groups, service users referred to how the garden had furthered their horticultural knowledge and skills, for example: in terms of planting seeds and nurturing plants; watering and tending the plants; and harvesting produce for the kitchens. For example:

> Harry: *"I didn't know anything beforehand about gardening really. No idea, but I've been taught how to grow stuff, and harvest veg."* (FG3: 16)

> William: *"Growing seedlings and then harvesting the garden. (I've) Learnt lots about planting, weeding."* (FG3: 17)

Being detained in secure services has profound restrictions on elements of occupational engagement that can contribute to a sense of wellbeing, such as role-freedom and its associated responsibilities (Page, 2008). Echoing issues addressed in Core Theme 2 regarding the opportunity to use "normal" working skills, Anthony, for example, looked ahead to the personal responsibilities associated with using specific tools:

> *"...you know when you've done something and you have to sweep all of the mud off paths and stuff like that. And when we're using the shovels...when you'd finished with it, you have to give it a wash down and brush it, stuff like that. Same with forks, spades, trowels."* (FG1: 16)

Whilst retrospectively, several participants voiced a sense of accomplishment that emerged from being trusted to behave in an orderly and responsible manner, including Neil:

> Neil: *"As the garden rep, you have to stick to the guidelines...like trying to be safe and considerate, wearing the correct clothing. Having a nice shower after, you feel rewarded, like you've earned it."* (FG3: 18)

These accounts of empowerment and responsibility are congruent with the reflections on intrinsic motivation, above. Biddle et al. (2014) report that such behavior is often linked to feelings of autonomy, control and self-determination and, in this case, the garden would seem to have provided exactly such rewards. It also afforded opportunities for service users and staff to come together in more relaxed surroundings to undertake activities that the service users themselves found liberating and fulfilling in terms of it being a mechanism for improving relationships with others:

> Jake: *"Two of us work together on Tuesdays, and help each other, doing the same things. I'll start and he'll finish. We'll start one thing and finish another. It works well."* (FG3: 31)

> Harry: *"I like swapping jobs, and working together. We can talk about it. We have to be careful outside, or you could have a 24-hour ban. So we try our best not to fall out with each other outside...especially as you've got tools. We try not to take issues outside with us."* (FG3: 32)

Such constructive interaction has been widely

reported to promote wider social functioning and group cohesiveness (Fieldhouse & Sempik, 2014) with numerous psycho-social health benefits (Perrins-Margalis et al., 2000). However, Cole (2014) cautions that group dynamics and occupational performance are complex phenomena with multiple factors influencing behavior. As such, one should not expect universalised impacts in all domains where human interactions are involved. In these terms, Tim noted that the garden, for all of its benefits, was not a "miracle cure" for longstanding, troubled relationships within the unit:

> *"I mean if you don't get on full stop, I mean just half an hour in the garden it won't like let it all go. Well it wouldn't with me."* (FG2: 56)

Finally, all service users were clear that their physical fitness had improved, some referring to becoming healthier and stronger; being "tired" from the physical tasks as a positive outcome; and being happier due to the intensity of exercise they were undertaking.

> Anthony: *"I feel good, it relaxes me when I dig, and when I work hard. I felt fitter when I was doing heavy work."* (FG3: 12)

> Neil: *"I feel a lot better in myself...like physically. I keep going until I'm tired. It's like the release of endorphins, you feel good…a lot better, like you've done something good."* (FG3: 21)

Enjoyment, satisfaction and pleasure were clearly evident at gardening sessions. These positive mood states, arising from exercising in the garden, are consistent with a wide body of research that links horticulturally-oriented physical activity with mental health benefits (Gonzalez et al., 2009; Perrins-Margalis et al., 2000; Söderback et al., 2004).

Conclusions

The horticultural intervention detailed above appears to have produced highly positive outcomes for the service users. The garden itself was described as a place in which they could "escape" from everyday stressors, facilitating both flow and attention restoration effects. Service users valued contributing to the garden's inception and ongoing development – thereby promoting a sense of empowerment, ownership, and responsibilities to self and important others. This appears to have transferred into their passion and enjoyment from undertaking the varied tasks in the garden, and the enhanced feelings of self-worth, pride and achievement derived from growing their own produce. Mechanisms for improvements in subjective wellbeing were thereby derived from numerous sources, including the natural environment they engaged with; the varied and motivating tasks; and the perceived rewards of participation, including development of horticultural skills and knowledge.

Providing opportunities for service users to undertake HT in similar settings using purpose-built facilities or locally accessible options may therefore have significant potential in the development of pro-social behaviors and facilitation of general wellbeing. Consequently, this can result in reductions in treatment time, length of stay and reductions in costs to the service. The findings of this study will ideally, therefore, have direct and productive import for staff and service users in comparable settings.

Finally, given the paucity of existing research in forensic settings using HT interventions, it is important that further qualitative and quantitative research is undertaken to fully appreciate the benefits that might be obtained, and to strengthen the evidence base. This could involve triangulating participants' subjective accounts of changes to health and wellbeing, with quantifiable records involving incidents of aggression and self-harm, in addition to changes in recovery star profiles involving a larger cohort of service users in a similar setting. It will, however, rarely (if ever) be possible to compile a study of this order over so large a population as to find active statistical significance in a quantitative tool (Christie et al., 2015), and therefore the small sample size herein should not be seen as a "limitation" *per se*. Generalization is not the purpose of this order of interpretative work. Optimally, the findings above might not only stand as study-specific novelties in themselves, but also as a set of practice-grounded and flexible ideas from which future research around PD and ID therapy in horticultural settings might launch – what the great sociologist Herbert Blumer (1954) termed "sensitizing concepts."

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